REMARKS

Claims 1-11 are all the claims pending in the application.

The specification, Abstract and claims have been amended to overcome the objections pointed out the by Examiner.

In the last Office Action Claims 1-11 inclusive were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-9 of co-pending application 10/013,662. A Terminal Disclaimer is submitted herewith with respect to this application thereby overcoming the double-patenting rejection.

Claims 1-11 inclusive were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 3, 4, 6 and 10 of co-pending application 10/009,773. This rejection is traversed for the following reasons.

Application No. 10/009,773 teaches an isothermal reactor of substantially different structure, wherein heat-exchange tubes extending within the catalytic bed are grouped in superimposed, structurally independent modular units, each of which including at least two tubes, then modules wrapping around a corresponding portion of the inner side wall f the catalytic bed and provided with respective connecting portion to feed and discharge collectors of the reactor.

None of these features, which are essential for the invention disclosed in co-pending Application No. 10/009,773, are contained in present Claim 1 and they are clearly excluded there from.

In fact, according to the present invention, the isothermal reactor is provided with at least one tube extending within a catalytic bed along a plane substantially perpendicular with respect to the side walls of the bed. Therefore, the claimed reactor differs from the modular arrangement disclosed in co-pending Application No. 10/009,773 both from the structural and functional point of view.

This obviousness-type double patenting rejection should thus be regarded as unfounded.

In the last Office Action Claims 1-6 inclusive were rejected as being anticipated by Marold et al. (DE 37 08 957). Claims 1-3 inclusive were rejected under 35 U.S.C. § 102(b) as being anticipated by Ruppel et al. (EP 0 534 195). Claims 1 and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Groombridge (GB 391 444). Claims 1 and 2 were rejected under 35 U.S.C. § 102(b) as being anticipated by Mehta et al. (US 3,663,179). Claims 1 and 2 were rejected under 35 U.S.C. § 102(b) as being anticipated by Schober (AT 362 397). It is submitted that non of these claims are anticipated by the foregoing references for the following reasons.

Claim 1 of the present application recites that the isothermal reactor according to the invention comprises at least one catalytic bed having opposed **perforated side walls** for the inlet and outlet of reactants.

In Groombridge (GB 391 444) and Schober (AT 362 397) there are disclosed vertical reactors, in which the catalyst is contained by perforated upper and lower horizontal bottom walls and **non perforated side walls** (see Groombridge figure 1 and Schober figure 7).

The expression "side walls" has a clear and unambiguous meaning in the technical field and thus the skilled person comparing the vertical reactors of Groombridge and Schober with the present invention can in no way confuse the side walls of Claim 1 with the horizontal perforated walls of these documents.

These arguments also apply to the embodiment of figure 1 of Marold et al. (DE 37 08 957) and to the reactor disclosed in Metha et al. (US 3,663,179).

With respect to Schober and Marold et al. it is further noted that the tubes shown are not made to pass through the catalytic bed -- as for the tubes claimed in the present invention - but merely extend along a portion of the catalytic bed for feeding therein reactant gases.

The above cited prior art is thus concerned with a reactor type totally different from the structural and functional point of view with respect to the claimed one, and thus it cannot be regarded as relevant prior art for the assessing the novelty and obviousness of the present invention.

Claim 1 of the present application also recites in the characterizing portion that said at least one [cooling or heating] tube (13) extends within said at least one catalytic bed (3) along a plane substantially perpendicular with respect to the [perforated] side walls (4,5).

Although, in the embodiment of figure 2 of Marold et al. there is disclosed a catalytic bed with perforated side walls (see Marold et al., column 5, lines 28-41), in this case the heat-exchange tube 7 does not extend along a plane substantially perpendicular to the side walls. On the contrary, Marold et al. clearly teaches that such tube should extend along a plane substantially parallel with respect to these walls (see figure 2, zig-zag pattern of tube 7).

Figures 3 and 4 of Marold et al. show two arrangements of a cooling or heating tube extending within the catalytic bed along a plane. However, these arrangements are clearly and unambiguously intended for the embodiment of figure 1 only.

Analogously, in Ruppel et al. (EP-A-534195) it is clearly shown at least one [cooling or heating] tube (03), which extends along a cylindrical surface substantially parallel with respect to the [perforated] side walls (09). See figures 1 and 2 and description, column 5, line 55 to column 6, line 21.

Ruppel et al, discloses a helicoidal tube arrangement, wherein each tube (03) for the passage of a cooling or heating fluid extends (vertically) from a position nearby the upper part of the shell (collector 05) to a position nearby the lower part of the shell (distributor 04) so as to form a helicoidal tube bundle.

In particular, in Ruppel et al., each single tube is wrapped along the catalytic bed with a predetermined slope, so that the tube vertically extends in the catalytic bed with helicoidal arrangement as clearly shown in the figures; that is along a respective cylindrical surface parallel to the shell axis.

This is in clear contrast with the reactor according to present Claim 1, wherein the at least one tube extend within the catalytic bed along a plane substantially perpendicular with respect to the side walls of the bed.

In other words, according to Ruppel et al. the tubes are crossed in series by the radial flow of reactants flowing in the catalytic bed, while according to the present invention the at least one tube is advantageously crossed in parallel by such reactant radial flow.

Ruppel et al. and Marold et al. (embodiment of figure 2) are indeed equivalent to DE-A 3 318 098 cited in the prior art section of the present application and suffer of the same drawbacks described therein and thus they should be considered as mere prior art as defined in the preamble of present Claim 1.

Therefore, none of the cited documents discloses or suggests an isothermal reactor having the features as Claimed in present Claim l.

In particular, there is no disclosure or teaching in the cited prior art to provide cooling or heating tubes that extend) along a plane within a catalytic bed having perforated side walls that are substantially perpendicular with respect to such plane, as is the case for Claim 1 of the above-identified application.

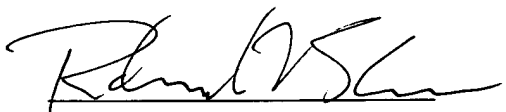
In the last Office Action Claims 7-11 inclusive were rejected under 35 U.S.C. § 103(a) as being unpatentable over any one of Marold et al., Ruppel et al. Groombridge, Mehta et al. or Schober in view of Lahne et al. (US 4,339,413). It is noted that each of these claims is dependent directly or indirectly from Claim 1. The five basic references relied upon in the rejection under 103 failed to disclose the features of Claim 1 for the reasons set forth above. The patent to Lahne et al. also fails to disclose the features as called for in Claim 1 and is directed to the additional limitations of Claims 7-11. Therefore, it submitted that Claims 7-11 inclusive would not be the least bit obvious in view of the combined teachings of the six references as relied upon in the last Office Action.

In view of the foregoing amendments and arguments it is submitted that Claims 1-11 inclusive are clearly patentable over the prior art. Therefore, it is respectfully requested that Claims 1-11 inclusive be allowed and the application passed to issue forthwith.

If for any reason the Examiner is unable to allow the application on the next Office Action and feels that an interview would be helpful to resolve any remaining issue, the Examiner is respectfully requested to contact the undersigned attorney for the purpose of arranging such an interview.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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